

## CLAIMS

What is claimed is:

1           1.    A method for servo track writing comprising:  
2           coupling a reference disk and a copy disk to a spindle  
3           motor of a servo track writer;  
4           reading the reference disk with a read head of the servo  
5           track writer, said reference disk having a plurality of tracks  
6           containing servo information; and,  
7           writing said servo information onto a copy disk using a  
8           write head of said servo track writer before said copy disk is  
9           incorporated into a hard disk drive assembly.

1           2.    The method of claim 1 wherein reading the reference  
2           disk comprises performing a track following operation, where  
3           said track following operation comprises:  
4           positioning said read head at a first track on said  
5           reference disk;  
6           following at least a portion of said first track with  
7           said read head, said reference disk to be rotated using a  
8           fluid dynamic bearing spindle;  
9           determining a position error signal for said read head;  
10          correcting a position of said read head using said  
11          position error signal; and,  
12          reading servo information from at least said portion  
13          using said read head.

1           3.    The method of claim 1 further comprising rotating  
2   said reference disk and said copy disk using a fluid dynamic  
3   bearing spindle.

1           4.    The method of claim 1 wherein writing said servo  
2   information to the disk comprises writing a plurality of burst  
3   signals to the disk, said burst signals to be read by a drive  
4   head of said hard disk drive assembly to determine a position  
5   of said drive head.

1           5.    The method of claim 1 wherein reading the reference  
2   disk comprises reading the reference disk with a read head of  
3   the servo track writer where said reference disk is encoded  
4   with a phase modulated servo pattern.

1           6.    The method of claim 1 wherein reading the reference  
2   disk comprises reading the reference disk with a read head of  
3   the servo track writer where said servo information is  
4   recorded onto said reference disk using an offline servo track  
5   writer.

1           7.    The method of claim 1 further comprising  
2   incorporating said copy disk into a disk stack of said hard  
3   disk drive assembly, copying at least a portion of said servo  
4   information onto a blank disk that is on said disk stack, and  
5   using said servo information to determine a position of a  
6   drive head of said hard disk drive assembly.

1           8.    The method of claim 1 wherein writing said servo  
2   information onto said copy disk comprises writing said servo  
3   information onto said copy disk where said servo information  
4   and said disk copy are to be used in a dedicated servo system.

1           9.    A servo track writer comprising:  
2           an actuator having a plurality of actuator arms;  
3           a read head connected to one of said actuator arms;  
4           a write head connected to another of said actuator arms;  
5           a chuck to secure a reference disk and a copy disk onto a  
6   spindle, said spindle to rotate said reference disk and said  
7   copy disk; and,  
8           a controller to:  
9           read the reference disk with said read head, said  
10   reference disk to include a plurality of tracks containing  
11   servo information; and,

12           write said servo information onto said copy disk using  
13   said write head before incorporating said copy disk into a  
14   hard disk drive assembly.

1           10.   The servo track writer of claim 9 wherein said  
2   controller further is to:  
3           position said read head at a first track on said  
4   reference disk;  
5           follow at least a portion of said first track with said  
6   read head;  
7           determine a position error signal for said read head;  
8           correct a position of said read head using said position  
9   error signal; and  
10          read said servo information from at least said portion  
11   using said read head.

1           11.   The servo track writer of claim 10 further  
2   comprising a plurality of copy disks and a plurality of write  
3   heads associated therewith.

1           12.   The servo track writer of claim 10 wherein said  
2   servo information is to be stored in memory before being  
3   written to said copy disk.

1           13. The servo track writer of claim 9 wherein said  
2 spindle comprises a fluid dynamic bearing spindle.

1           14. The servo track writer of claim 9, wherein said  
2 reference disk is encoded with a phase modulated servo  
3 pattern.

1           15. The servo track writer of claim 9, wherein said  
2 servo information is recorded onto said reference disk using  
3 an offline servo track writer.

1           16. The servo track writer of claim 9 wherein said copy  
2 disk is to be incorporated into a disk stack of a hard disk  
3 drive assembly after said servo information has been written  
4 onto said copy disk, said servo information on said copy disk  
5 to be used to determine a position of a drive head in said  
6 hard disk drive assembly where said hard disk drive assembly  
7 utilizes a dedicated servo system.

1           17. The servo track writer of claim 9, wherein said copy  
2 disks are to be incorporated into a disk stack of a hard disk  
3 drive assembly after said servo information has been written

4 onto said copy disk, said servo information on said copy disk  
5 to be copied onto a blank disk in said hard disk drive  
6 assembly where said hard disk drive assembly utilizes an  
7 embedded sector servo system.

1 18. A servo track writer comprising:  
2 an actuator having a plurality of actuator arms and heads  
3 attached thereto;

4 spindle means to rotate a reference disk and a copy disk,  
5 said reference disk to contain a plurality of tracks having  
6 servo information to be read by at least one of said heads;

7 means to secure said reference disk and said copy disk to  
8 said spindle means;

9 means to perform a track following operation on said  
10 reference disk;

11 means to write said servo information onto said copy disk  
12 before said copy disk is incorporated into a hard disk drive  
13 assembly.

1 19. The servo track writer of claim 18 wherein said  
2 means to perform the track following operation comprises:

3 means for positioning a first head on a track on said  
4 reference disk;

5 means for following at least a portion of said track with  
6 said first head;

7 means for determining a position error signal for said  
8 first head;  
9 means for correcting a position of said first head using  
10 said position error signal; and  
11 means for reading said servo information from at least  
12 said portion with said first head.

1 20. The servo track writer of claim 18, further  
2 comprising means for incorporating said copy disk into said  
3 hard disk drive assembly, said copy disk to contain said servo  
4 information copied from said reference disk.

1 21. A servo track writer comprising:  
2 an actuator having a plurality of actuator arms;  
3 a read head connected to one of said actuator arms;  
4 a write head connected to another of said actuator arms;  
5 and,  
6 a fluid dynamic bearing spindle, said fluid dynamic  
7 bearing spindle to rotate a reference disk and a copy disk in  
8 a servo track writing operation.  
9 a chuck to secure the reference disk and the servo-copy  
10 disk to said fluid dynamic bearing spindle.  
11 a controller to:  
12 perform a track following operation on said reference  
13 disk, said reference disk to include a plurality of tracks

14 containing servo information to be read by said read head;  
15 and,  
16 write said servo information onto said copy disk using  
17 said write head before incorporating said copy disk into a  
18 hard disk drive assembly.

1 22. The servo track writer of claim 21 wherein said  
2 track following operation comprises:  
3 positioning said read head at a first track on said  
4 reference disk;  
5 following at least a portion of said first track with  
6 said read head;  
7 determining a position error signal for said read head;  
8 correcting a position of said read head using said  
9 position error signal; and  
10 reading said servo information from at least said portion  
11 using said read head.

1 23. The servo track writer of claim 21 further  
2 comprising a plurality of copy disks each having a head  
3 associated therewith capable of writing information to said  
4 copy disks.



1           24. The servo track writer of claim 21 wherein said copy  
2 disk is to be incorporated into a disk stack of a hard disk  
3 drive assembly after said servo information has been written  
4 onto said copy disk, said servo information on said copy disk  
5 to be used to determine a position of a drive head of said  
6 hard disk drive assembly where said hard disk drive assembly  
7 utilizes a dedicated servo system.

1           25. The servo track writer of claim 21, wherein said  
2 copy disks are to be incorporated into a disk stack of a hard  
3 disk drive assembly after said servo information has been  
4 written onto said copy disk, said servo information on said  
5 copy disk to be copied onto a blank disk in said hard disk  
6 drive assembly where said hard disk drive assembly utilizes an  
7 embedded sector servo system.

1           26. The servo track writer of claim 21, wherein said  
2 fluid dynamic bearing spindle is an oil bearing spindle.